formation of composites of these oxides with sodium, potassium, rubidium, cesium, magnesium, calcium, strontium, barium, boron, gallium, indium and tin, etc. (col. 5, lines 57-65). These particles have an average particle diameter within the range of 0.15 to 5 micrometers (μm) (col. 6, lines 47-51).

The instant application claims an average particle size from 11 nm to 30 nm (0.011 to 0.030 μm), which is significantly different from the particle size disclosed in Yoneda et al.

In the instant invention, when composite oxide particles of the size claimed containing silica and at least one other inorganic oxide are used, the dispersion stability in the dispersion media is excellent, and aggregation of particulates and gelation does not occur. Even if an organic acid or a salt is present in the inorganic compound of the sol of the invention, the inorganic compound particulates do not aggregate with each other and gelation does not occur (page 10, line 27 to page 11, line 10).

In contrast, Yoneda et al. teaches away from the use of particles smaller than 0.13 micrometers, stating that gelling or precipitation poses problems when such particle sizes are used (col. 3, lines 9-22).

Therefore, Yoneda et al. does not disclose or suggest the use of inorganic compound particulates having an average particle size from 11 nm to 30 nm (0.011 to 0.030 μm) which are composed of silica or are composed of silica and at least one other inorganic oxide. It is believed that claims 1-2 and 4 are not anticipated by Yoneda et al.

The Examiner rejected claims 1-2 and 4 under 35 U.S.C. § 102 (b) as being anticipated by U.S. Patent No. 4,822,828 (Swofford), in view of U.S. Patent No. 3,909,278 (Johnson). The Examiner has cited Swofford, Examples IV and V, as disclosing the use of vinyltrimethoxysilane and NALCO 1034A. The Examiner has cited Johnson to show that

the NALCO 1034A is an aqueous colloidal dispersion of 34.5% SiO_2 having an acidic pH of 3.1.

However, the use of inorganic compound particulates which are composed of silica and at least one other inorganic oxide is neither specifically described nor suggested in either the Swofford or the Johnson patent.

Furthermore, the Swofford and Johnson patents do not specifically describe or suggest the average particle size (11 nm to 30 nm, or 0.011 μm to 0.030 μm) of the instant invention.

For these reasons, it is believed that claims 1 and 4 are not anticipated or rendered obvious by Swofford in view of Johnson.

The Examiner rejected claims 1, 3 and 4 under 35 U.S.C. § 102 (b) as being anticipated by U.S. Patent No. 5,366,545 (Yajima et al.). The Examiner has cited Yajima et al. as disclosing compositions containing γ-glycidoxypropyltrimethoxysilane.

Yajima et al. includes a description of a coating composition which contains an organosilicon composition and modified stannic oxide - zirconium oxide composite colloidal particles which are obtained by partially or fully coating the surface of stannic oxide - zirconium oxide composite colloidal particles with tungstic oxide - stannic oxide composite colloidal particles (claim 1 and col. 1, lines 45-52).

However, according to Yajima et al., the organosilicon compound serves only as a coating composition. The stannic oxide - zirconium oxide composite colloidal particles are modified by the tungstic oxide - stannic oxide composite colloidal particles (col. 1, lines 56-68). In contrast, the inorganic compound particulates of the present invention are modified by an organic compound exhibiting a molecular polarizability of from 2×10^{-40} to 850×10^{-40} $C^2m^2J^{-1}$ (page 4, lines 18-22). In no case are the inorganic compound

particulates of the instant invention modified by tungstic oxide - stannic oxide colloidal particles.

Given this difference between the coating composition of Yajima et al. and the instant invention, and the lack of any teaching by Yajima et al. concerning any effect of the organosilicon compound on the stannic oxide - zirconium oxide composite colloidal particles, it is believed that claims 1 and 4 are not anticipated by Yajima et al.

The Examiner rejected claims 1-4 under 35 U.S.C. § 103 (a) as being unpatentable over U.S. Patent No. 5,236,622 (Yoneda et al.). The Examiner maintains that Yoneda et al. (abstract and EXAMPLE 2-(9)) discloses inorganic compound sols.

However, according to the terminology used and the particle sizes stated in Yoneda et al., this is not the case. Both the abstract and the examples refer to the Yoneda et al. formulations as suspensions. The present invention is a sol. Suspensions differ from sols in terms of particle sizes and the propensity of the particles to settle. Because of these different propensities, the coupling agents in suspensions and sols have different primary functions. Therefore, it is not obvious that a coupling agent employed in a suspension will be suitable for use in a sol. Accordingly, it is believed that claims 1 and 4 are not obvious in light of Yoneda et al.

In view of the above, it is submitted that the claims are in condition for allowance. Reconsideration of the rejections is requested. Allowance of claims 1 and 4 at an early date is solicited.

Respectfully submitted,

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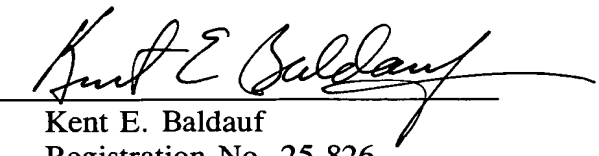
By 

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